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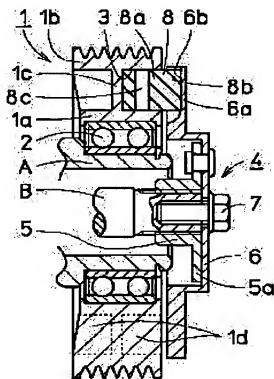
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(54) POWER TRANSMITTING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a power transmitting device capable of being easily assembled.

SOLUTION: A pulley 1 supported to the cylindrical projected part A of a compressor so as to be freely rotated, is the pulley made of synthetic resin into the center of which a bearing 2 is inserted. Plural housing parts 3 formed by each rib 1d are provided for the pulley 1, and each rubber connecting member 8 is fitted in the respective housing parts 3. The projected part 8b of each connecting member 8 is fitted in each recessed part 6b formed in a rotation member 6 mounted to a rotating shaft B. When the rotating shaft B is turned out to be in a locked condition while power is being transmitted, since the projected part 8b of the connecting member 8 escapes from the recessed part 6b of the rotating member 6 while being elastically deformed, the transmission of power is thereby intercepted.



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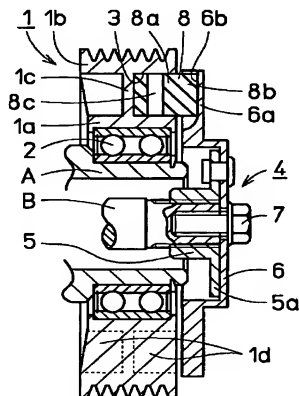
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(54) 【発明の名称】 動力伝達装置

(57) 【要約】

【課題】 組立が簡単にできる動力伝達装置を提供する。

【解決手段】 圧縮機の円筒突出部 A に回転自在に支持されたプーリ 1 は、中心に軸受 2 がインサートされた合成樹脂材製のプーリである。またプーリ 1 には、リップ 1 d により形成された複数の収容部 3 が設けられ、各収容部 3 にゴムの結合部材 8 が嵌合されている。結合部材 8 の突出部 8 b は、回転軸 B に装着された回転部材 6 に形成された凹部 6 b に嵌合されている。動力が伝達されているときに回転軸 B がロック状態になると、弾性変形しながら結合部材 8 の突出部 8 b は回転部材 6 の凹部 6 b から脱出するので動力の伝達が遮断される。



【特許請求の範囲】

【請求項 1】 内周面に軸受が一体に設けられた内側円筒部と、外周面にプリー溝が形成された外側円筒部と、これら内側円筒部と外側円筒部とを連結した円板部と、この円板部の側面に一体に形成され円周方向に間隔をおいて設けられた複数のリブを有するとともに、前記円板部と隣接する前記リブとにより画定された複数の収容部が設けられ従動側機器のハウジングに回転自在に支持された合成樹脂材製のプリーと、このプリーの収容部に嵌合され前記内側円筒部の端面より軸線方向に突出した複数の結合部材と、この結合部材と回転方向で係合する係合部が設けられ従動側機器の回転軸に装着された従動側回転部材とを設けたことを特徴とする動力伝達装置。

【請求項 2】 請求項 1 に記載された動力伝達装置において、前記従動側回転部材には前記プリーの収容部と軸線方向で対向するフランジ部が形成され、このフランジ部の側面に形成された複数の凹部に前記結合部材が係合されていることを特徴とする動力伝達装置。

【請求項 3】 請求項 1 に記載された動力伝達装置において、前記従動側回転部材には前記プリーの収容部と軸線方向で対向するフランジ部が形成され、このフランジ部に形成された複数の貫通穴に前記結合部材が係合されていることを特徴とする動力伝達装置。

【請求項 4】 請求項 1 に記載された動力伝達装置において、前記内側円筒部と半径方向で対向する前記結合部材の部位に被係合部が形成され、前記従動側回転部材には前記被係合部と回転方向で係合する係合部が形成された円筒部が設けられていることを特徴とする動力伝達装置。

【請求項 5】 請求項 1 から請求項 4 に記載された動力伝達装置において、前記結合部材は逃げ部が形成されたゴムであることを特徴とする動力伝達装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 この発明は、駆動側回転部材と従動側回転部材が過負荷発生時において破損または弾性変形する結合部材により連結された動力伝達装置に関するものである。

【0002】

【従来の技術】 一般にトルクリミットと言われる従来の動力伝達装置は、例えば実公平 6-39105 号公報に説明されているものが代表的である。その公報の動力伝達装置は、プリー（駆動側回転部材）とハブ（従動側回転部材）の軸線方向で対向する側面に嵌入穴を個々に形成して、その嵌入穴に結合部材を圧入嵌合した構造になっている。そして、圧縮機（従動側機器）の回転軸に過負荷が発生したとき、自動車エンジン（駆動側機器）の動力で結合部材が破損するようになっている。

【0003】

【発明が解決しようとする課題】 このような動力伝達装

置は、プリーの中心穴に軸受を圧入嵌合してスナッピングにより抜け止める構造になっているので生産性が悪い。また過負荷が発生することにより結合部材が破損する構造であり、何らかの原因により一次的に回転軸の負荷が上昇した場合でも結合部材が破損して圧縮機の再駆動ができなくなってしまう。この発明は、装置の組立が簡単でできるとともに一次的に上昇した回転軸の負荷が消滅することにより再び動力の伝達が可能になる動力伝達装置を提供することを目的とする。

【0004】

【課題を解決するための手段】 この発明の動力伝達装置は、駆動側回転部材を中心に軸受がインサートされた合成樹脂材製のプリーとすることにより目的を達成した。そして請求項 1 に記載された動力伝達装置は、内周面に軸受が一体に設けられた内側円筒部と、外周面にプリー溝が形成された外側円筒部と、これら内側円筒部と外側円筒部とを連結した円板部と、この円板部の側面に一体に形成され円周方向に間隔をおいて設けられた複数のリブを有するとともに、前記円板部と隣接する前記リブとにより画定された複数の収容部が設けられ従動側機器のハウジングに回転自在に支持された合成樹脂材製のプリーと、このプリーの収容部に嵌合され前記内側円筒部の端面より軸線方向に突出した複数の結合部材と、この結合部材と回転方向で係合する係合部が設けられ従動側機器の回転軸に装着された従動側回転部材とを設けたことを特徴とする。

【0005】 また請求項 2 に記載された動力伝達装置は、請求項 1 に記載された動力伝達装置において、前記従動側回転部材には前記プリーの収容部と軸線方向で対向するフランジ部が形成され、このフランジ部の側面に形成された複数の凹部に前記結合部材が係合されていることを特徴とする。

【0006】 また請求項 3 に記載された動力伝達装置は、請求項 1 に記載された動力伝達装置において、前記従動側回転部材には前記プリーの収容部と軸線方向で対向するフランジ部が形成され、このフランジ部に形成された複数の貫通穴に前記結合部材が係合されていることを特徴とする。

【0007】 また請求項 4 に記載された動力伝達装置は、請求項 1 に記載された動力伝達装置において、前記内側円筒部と半径方向で対向する前記結合部材の部位に被係合部が形成され、前記従動側回転部材には前記被係合部と回転方向で係合する係合部が形成された円筒部が設けられていることを特徴とする。

【0008】 また請求項 5 に記載された動力伝達装置は、請求項 1 から請求項 4 に記載された動力伝達装置において、前記結合部材は逃げ部が形成されたゴムであることを特徴とする。

【0009】

【発明の実施の形態】 図 1 と図 2 に示された動力伝達装

置は、従動側機器としての自動車空調用圧縮機（連続可変容量タイプの圧縮機）に装着され駆動側機器としての自動車エンジンの動力を圧縮機に伝達する装置であり、図1は一部分を破断した平面図、図2は断面図である。これら図面の動力伝達装置は、圧縮機の円筒突出部Aに回転自在に支持された合成樹脂材製のプーリー1と圧縮機の内転軸Bに装着された従動側回転軸としてのハブ組立体4、これらプーリー1とハブ組立体4を連結する結合部材8とを備えている。

【0010】プーリー1は、成型機のキャビティにインサート金具としての軸受2を配置するとともに、熔融樹脂材料をゲートからキャビティに注入することにより形成されたものである。このように合成樹脂材料の射出成型により形成されたプーリー1は、軸受2の外輪が内周面に一体に結合された内側円筒部1aと、この内側円筒部1aと同心状に設けられ外周面にプーリー溝が形成された外側円筒部1bと、これら内側円筒部1aの外周面と外側円筒部1bの内周面を軸線方向略中央で連結した円板部1cが一体に形成されている。またプーリー1には、円板部1cから軸線方向に突出しているとともに、半径方向内側は内側円筒部1aの端部まで延び、半径方向外側は外側円筒部1bの端部まで延び、側面が傾斜している複数のリブ1dが、円周方向に間隔をおいて一体に形成されている。そして円板部1cと隣接するリブ1dにより、プーリー1には、軸線方向に開口した略扇形の複数の収容部3が形成されている。なお軸受2は、圧縮機のハウジングに形成された円筒突出部Aに嵌合されスナップリングで抜け止めされている。

【0011】ハブ組立体4は、圧縮機の内転軸Bにスプライン嵌合されたハブ5と、このハブ5のフランジ部5aに複数のリベットで固定された回転部材6が設けられ、回転部材6の中心部分を回転軸Bに当接させ同中心部分に形成された貫通穴から挿入されたねじ7を回転軸Bに形成されたねじ穴に螺合することにより、このハブ組立体4は回転軸Bに一体に装着されている。また回転部材6には、プーリー1の収容部3と軸線方向で対向する円板状のフランジ部6aが形成されている。また機械フランジ部6aの側面には、円周方向に間隔をおいて設けられているとともに、収容部3側と半径方向外側に開口した係合部としての複数の凹部6bが形成されている。なお回転部材6の材質は、合成樹脂材で鉄材でも強度上満足すればいずれであってもよい。また回転軸Bの端部と回転部材6の間には、プーリー1に対する回転部材6の位置調整をするためにシムが介在される場合がある。

【0012】結合部材8は、断面が略扇形の角柱状のゴム部材であり、プーリー1の収容部3に圧入嵌合された圧入部8aと、プーリー1の収容部3から突出するとともに回転方向の端面から中央に向かって上昇し中央から反回転方向の端面に向かって下降する円弧状の端面に形成された係合部としての突出部8bが設けられている。ま

た圧入部8aには、弾性変形した際の逃げ部として貫通穴8cが形成されている。このような形状からなる結合部材8の圧入部8aをプーリー1の収容部3に圧入嵌合するとともに、結合部材8の突出部8bを回転部材6の凹部6bに嵌合することにより、プーリー1とハブ組立体4は一体に連結される。なお結合部材8をプーリー1の収容部3に2つ置きに嵌合したとき、動力伝達の限界値を設定するに当たり、結合部材8を1つ置きにまたは全ての収容部3に嵌合する場合もある。また結合部材8の突出部8bの端面を円弧状の端面とし、その結合部材8の突出部8bと回転部材6の凹部6bの係合が円滑に解除されるようにしたが、平らな端面としてもよい。

【0013】このような構造からなる動力伝達装置は、プーリー1の外側円筒部1bに図示せぬベルトが掛けられ、プーリー1と結合部材8、ハブ組立体4は一体に回転するので、回転軸Bも回転して圧縮機が駆動される。また回転軸Bがロック状態になると、プーリー1の回転力により、結合部材8の突出部8bが弾性変形しながら回転部材6の凹部6bから脱出するとともに、結合部材8は回転部材6と収容部3との間に形成されている空間に圧縮されるので、プーリー1のみが回転して動力の伝達が遮断される。したがって、プーリー1に掛けたベルトが切断されて他の従動側機器への動力の伝達ができなくなるなどの問題の発生を防止できる。また回転軸Bの一次的な負荷の上昇により結合部材8の突出部8bと回転部材6の凹部6bの係合が解除された場合は、回転軸Bの負荷が消滅することにより突出部8bと凹部6bが再度係合される。また更に回転軸Bが完全にロック状態になった場合は、結合部材8が破損して動力の伝達が完全に遮断される。

【0014】またこのような構造からなる動力伝達装置は、合成樹脂材料の射出成型によりプーリー1の内周面に軸受2をインサートして一体に結合した構造を採用したことで、プーリー1の内周面に軸受2を嵌合して抜け止める組立工程を省くことができる。また更に、円板部1cと隣接するリブ1dにより固定された収容部3をプーリー1に一体に形成したので、結合部材8を嵌合する穴の機械加工を省くことができる。なお、プーリー1に形成された収容部3の形状、その収容部3に嵌合される結合部材8の形状、ハブ組立体4の構造などは、実施形態の動力伝達装置の形状、構造に限定されず設計の変更ができる。特にハブ組立体4は、ハブ5のフランジ部5aを半径方向へ延長することにより、そのフランジ部5aを回転部材6とすることができ、また結合部材8の逃げ部は、貫通穴8cではなく円板部1cに当接する面に形成される切欠き溝などであってもよい。

【0015】次に、別の実施の形態について説明する。図3は一部分が破断された平面図であり、図4は断面図である。これら図面に示された動力伝達装置は、先に説明した動力伝達部材に対して結合部材の形状とハブ組立

体の回転部材の形状、結合部材と回転部材が回転方向で係合した構造が相違している。なおプリー１の構造は同じであるから、既に使用した符号を図面に示すことにより、重複する詳細な説明は省略する。

【0016】すなわち圧縮機の回転軸Ｂに装着されたハブ組立体９には、ハブ５のフランジ部５ａに複数のリベットで固定された円板状の内向きフランジ部１０ａと、プリー１の収容部３と軸線方向で対向する円板状の外向きフランジ部１０ｂと、これらフランジ部１０ａ、１０ｂを連結した円筒部１０ｃを有する形状からなり、外向きフランジ部１０ｂに係合部としての複数の貫通穴１１が形成された回転部材１０が設けられている。そして、回転部材１０の内向きフランジ部１０ａの側面が回転軸Ｂの軸端に当接するまでハブ５を回転軸Ｂにスプライン嵌合した後、ねじ７を回転軸Ｂのねじ穴に螺合することにより、ハブ組立体９は回転軸Ｂに一体に装着されている。

【0017】また回転部材１０の各貫通穴１１は、プリー１の収容部３の開口部より円周方向の幅が狭くっており、ハブ組立体９を回転軸Ｂに装着するに当たり、結合部材８の突出部８ｂに形成した円弧状端面のうち回転方向中央寄りの端面が回転部材１０の貫通穴１１に嵌合されわずかに突出する。

【0018】このような構造からなる動力伝達装置は、先に説明した動力伝達装置と同様な作用が得られ、圧縮機の回転軸Ｂがロックしたとき、弾性変形しながら結合部材８の突出部８ｂが回転部材１０の貫通穴１１から脱出するので、動力の伝達が遮断される。なおこの実施の形態は、結合部材８と回転部材１０が回転方向において係合した構造が相違するのみであって、先の実施の形態と同様に、組立工程や機械加工を省くことができるとともに設計の変更が可能である。

【0019】次に、また別の実施の形態について説明する。図５は平面図であり、図６は断面図である。これら図面に示された動力伝達装置は、先に説明した動力伝達部材に対してプリーのリップ形状、結合部材の形状、ハブ組立体の回転部材の形状、結合部材と回転部材が回転方向で係合した構造が相違している。なお既に説明した動力伝達装置と同じ構造については、既に使用した符号を図面に示すことにより、重複する詳細な説明は省略する。

【0020】すなわち圧縮機の円筒突出部Ａに回転自在に支持されたプリー１は、軸受２の外輪が内周面に一体に結合された内側円筒部１２ａと、プリー薄が外周面に形成された外側円筒部１２ｂと、これら円筒部１２ａ、１２ｂを連結した円板部１２ｃと、内側円筒部１２ａの外周面と外側円筒部１２ｂの内周面、および円板部１２ｃの側面と一体に形成された複数のリップ１２ｄ、１２ｅが設けられた合成樹脂材の射出成型品として構成されている。また回転部材１４側のリップ１２ｄと圧縮機の

ハウジング側のリップ１２ｅとは形状が相違しており、リップ１２ｄは円筒部１２ａ、１２ｂの端部より凹状に窪んでいる。そしてこのリップ１２ｄと円板部１２ｃにより、結合部材１５が嵌合される複数の収容部１２ｆが画定されている。なおリップ１２ｅは、先に説明したプリー１と同様な形状である。

【0021】また圧縮機の回転軸Ｂに装着されたハブ組立体１３には、ハブ５のフランジ部５ａに複数のリベットで固定されたカップ状の回転部材１４が設けられている。回転部材１４の円筒部１４ａには、略Ｖ字状に窪んだ複数の凹部１４ｂが係合部として形成されている。そして、円筒部１４ａの先端がプリー１２の収容部１２ｆ内に挿入されるように、ハブ組立体１３は回転軸Ｂに一体に装着されている。なおこのような形状からなる回転部材１４は、板金のプレス加工により形成される。

【0022】またプリー１２の収容部１２ｆに圧入嵌合された複数の結合部材１５は、収容部１２ｆと同様な断面が略扇形の角柱形状に形成されているとともに逃げ部としての貫通穴１５ｂが形成されたゴム部材であり、プリー１２の内側円筒部１２ａの先端側と半径方向で対向する部位には、被係合部としての略Ｖ字状の凸部１５ａが形成されている。各凸部１５ａは回転部材１４の各凹部１４ｂに嵌合され、結合部材１５と回転部材１４が回転方向で係合されている。

【0023】このような構造からなる動力伝達装置は、圧縮機の回転軸Ｂがロックしたとき結合部材１５が弾性変形してこの結合部材１５と回転部材１４の係合が解除される。またその状態が続くことにより、結合部材１５の凸部１５ａが破損する。なおこの実施の形態においても、先の実施の形態と同様に、組立工程や機械加工を省くことができるとともに設計の変更が可能である。

【0024】

【発明の効果】この発明の動力伝達装置は、駆動側回転部材を中心に軸受がインサートされた合成樹脂材製のプリーとするとともに、円板部と隣接するリップとにより画定されたプリーの収容部に結合部材を嵌合する構造にしたので、プリーの円周面に軸受を嵌合して抜けが解れる組立工程と結合部材を嵌合する穴の機械加工を省くことができる。

【0025】またこの発明の動力伝達装置は、一次的に上昇した回転軸の負荷が消滅することにより再び動力の伝達が可能になるとともに、プリーに形成された複数の収容部に嵌合される結合部材の数により動力伝達力の限界値を簡単に設定することができるなど、有効な動力伝達装置を安価に提供できる。

【図面の簡単な説明】

【図１】この発明の実施の形態として示された動力伝達装置であり、一部分を破断した平面図である。

【図２】図１の断面図である。

【図３】別の実施の形態として示された動力伝達装置で

あり、一部分を破断した平面図である。

【図 4】 図 3 の断面図である。

【図 5】 別の実施の形態として示された動力伝達装置の平面図である。

【図 6】 図 5 の断面図である。

【符号の説明】

1 プーリ

2 軸受

* 3 収容部

5 ハブ

6 回転部材

8 結合部材

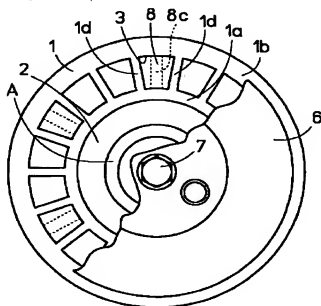
10 回転部材

12 プーリ

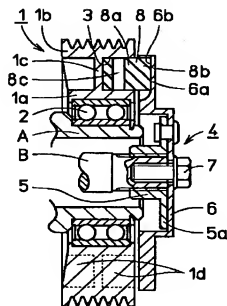
14 回転部材

* 15 結合部材

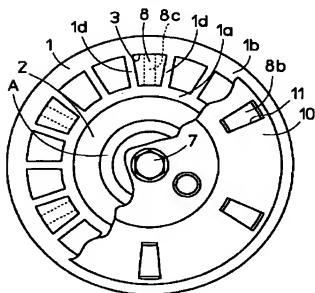
【図 1】



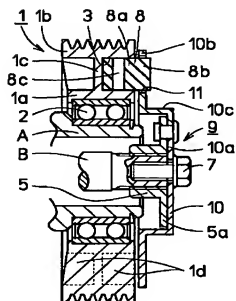
【図 2】



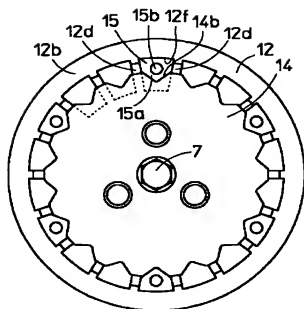
【図 3】



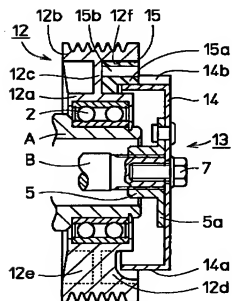
【図 4】



【図5】



【図6】



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CLAIMS

[Claim(s)]

[Claim 1] The inside body by which bearing was prepared in inner skin at one, and the outside body by which the pulley slot was formed in the peripheral face, While having two or more ribs which were formed in the side face of the disk section which connected these inside body and the outside body, and this disk section at one, set spacing to the circumferencial direction and were prepared in it The pulley made from synthetic-resin material which two or more hold sections demarcated with said rib which adjoins said disk section were prepared, and was supported by housing of a follower side device free [a revolution]. The transmission characterized by preparing two or more bond part material which fitting was carried out to the hold section of this pulley, and projected in the direction of an axis from the end face of said inside body, and the follower side revolution member with which the engagement section engaged in this bond part material and hand of cut was prepared, and the revolving shaft of a follower side device was equipped.

[Claim 2] The transmission characterized by said bond part material engaging with two or more crevices which the hold section of said pulley and the flange which counters in the direction of an axis were formed in said follower side revolution member in the transmission indicated by claim 1, and were formed in the side face of this flange.

[Claim 3] The transmission characterized by said bond part material engaging with two or more through holes which the hold section of said pulley and the flange which counters in the direction of an axis were formed in said follower side revolution member in the transmission indicated by claim 1, and were formed in this flange.

[Claim 4] The transmission characterized by preparing the body in which the engaged portion was formed in the part of said bond part material which counters by radial [said / inside body and radial] in the transmission indicated by claim 1, and the engagement section which engages with said follower side revolution member in said engaged portion and hand of cut was formed.

[Claim 5] Said bond part material is a transmission characterized by being rubber in which roll off was formed in the transmission indicated by claim 4 from claim 1.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the transmission with which the driving-side revolution member and the follower side revolution member were connected by breakage or the bond part material which carries out elastic deformation at the time of overload generating.

[0002]

[Description of the Prior Art] As for the conventional transmission generally called torque limiter, what is explained to JP,6-39105,Y is typical. The transmission of the official report forms an insertion hole in the side face which counters in the direction of an axis of a pulley (driving-side revolution member) and a hub (follower side revolution member) separately, and has structure which carried out press fit fitting of the bond part material in the insertion hole. And when an overload occurs in the revolving shaft of a compressor (follower side device), bond part material is damaged under the power of an automobile engine (driving-side device).

[0003]

[Problem(s) to be Solved by the Invention] Since such a transmission has structure which escapes from by the snap ring and which carries out press fit fitting of the bearing in the main hole of a pulley, and carries out a stop, its productivity is bad. Moreover, even when the load of a revolving shaft goes up in primary according to a certain cause, bond part material will be damaged and re-actuation of a compressor will become impossible [are the structure which bond part material damages when an overload occurs, and]. When the load of the revolving shaft which went up in primary disappears, it aims at offering the transmission with which transfer of power is attained again, while this invention can perform assembly of equipment simply.

[0004]

[Means for Solving the Problem] The transmission of this invention attained the object by considering as the pulley made from synthetic-resin material with which bearing was inserted focusing on the driving-side revolution member. And the transmission indicated by claim 1 The inside body by which bearing was prepared in inner skin at one, and the outside body by which the pulley slot was formed in the peripheral face. While having two or more ribs which were formed in the side face of the disk section which connected these inside body and the outside body, and this disk section at one, set spacing to the circumferential direction and were prepared in it The pulley made from synthetic-resin material which two or more hold sections demarcated with said rib which adjoins said disk section were prepared, and was supported by housing of a follower side device free [a revolution]. It is characterized by preparing two or more bond part material which fitting was carried out to the hold section of this pulley, and projected in the direction of an axis from the end face of said inside body, and the follower side revolution member with which the engagement section engaged in this bond part material and hand of cut was prepared, and the revolving shaft of a follower side device was equipped.

[0005] Moreover, the transmission indicated by claim 2 is characterized by said bond part material engaging with two or more crevices which the hold section of said pulley and the flange which counters in the direction of an axis were formed in said follower side revolution member, and were formed in the side face of this flange in the transmission indicated by claim 1.

[0006] Moreover, the transmission indicated by claim 3 is characterized by said bond part material engaging with two or more through holes which the hold section of said pulley and the flange which counters in the direction of an axis were formed in said follower side revolution member, and were formed in this flange in the transmission indicated by claim 1.

[0007] Moreover, the transmission indicated by claim 4 is characterized by preparing the body in which the engaged portion was formed in the part of said bond part material which counters by radial [said / inside body and radial], and the engagement section which engages with said follower side revolution member in said engaged portion and hand of cut was formed in the transmission indicated by claim 1.

[0008] Moreover, in the transmission with which the transmission indicated by claim 5 was indicated by claim 4 from claim 1, said bond part material is characterized by being rubber in which roll off was formed.

[0009]

[Embodiment of the Invention] It is equipment which the compressor for automobile air conditioning as a follower side device (continuation variable-capacity type compressor) is equipped with the transmission shown in drawing 1 and drawing 2 , and transmits the power of the automobile engine as a driving-side device to a compressor, and the top view where drawing 1 fractured the part, and drawing 2 are sectional views. The transmission of these drawings is equipped with the bond part material 8 which connects the pulley 1 made from synthetic-resin material supported by the cylinder lobe A of a compressor free [a revolution], the hub assembly 4 as a follower side revolution member with which the revolving shaft B of a compressor was equipped and these pulleys 1, and the hub assembly 4.

[0010] A pulley 1 is formed by injecting a melting resin ingredient into a cavity from the gate while arranging the bearing 2 as insertion metallic ornaments to the cavity of a briquetting machine. Thus, disk section 1c which connected outside body 1b by which the pulley 1 formed of the injection molding of a synthetic-resin ingredient was concentrically formed with inside body 1a by which the outer ring of spiral wound gasket of bearing 2 was combined with inner skin by one, and this inside body 1a, and the pulley slot was formed in the peripheral face, the peripheral face of these inside body 1a, and the inner skin of outside body 1b in the center of the direction abbreviation of an axis is formed in one. Moreover, while projecting in the direction of an axis from disk section 1c in the pulley 1, the radial inside is prolonged to the edge of inside body 1a, and a radial outside extends to the edge of outside body 1b, and two or more rib 1d toward which the side face inclines sets spacing to a circumferential direction, and is formed in one. And of rib 1d which adjoins disk section 1c, two or more hold sections 3 of the abbreviation sector which carried out opening are formed in the direction of an axis at the pulley 1. In addition, fitting of the bearing 2 is carried out to the cylinder lobe A formed in housing of a compressor, and the stop is escaped from and carried out by the snap ring.

[0011] The hub 5 where spline fitting of the hub assembly 4 was carried out to the revolving shaft B of a compressor. The revolution member 6 fixed to flange 5a of this hub 5 by two or more rivets is formed. By ****ing and screwing 7 in the tapped hole which was inserted from the through hole which the amount of [of the revolution member 6] core was made to contact a revolving shaft B, and was formed in the concentricity part and which was formed in the revolving shaft B, the revolving shaft B is equipped with this hub assembly 4 at one. Moreover, disc-like flange 6a which counters in the hold section 3 and the direction of an axis of a pulley 1 is formed in the revolution member 6. Furthermore, while setting spacing to a circumferential direction and being prepared in the side face of flange 6a at it, two or more crevice 6b as the engagement section which carried out opening is formed in the hold section 3 side and the radial outside. In addition, as long as it is satisfied also with synthetic-resin material or iron material of the construction material of the revolution member 6 on reinforcement, it may be any. Moreover, between the end face of a revolving shaft B, and the revolution member 6, in order to carry out positioning of the revolution member 6 to a pulley 1, SIMM may intervene.

[0012] Lobe 8b as an engaged portion formed in the end face of the shape of radii which the bond part material 8 goes up toward a center from the end face of a hand of cut while a cross section projects from press fit section 8a by which is the prismatic form rubber member of an

abbreviation sector, and press fit fitting was carried out to the hold section 3 of a pulley 1, and the hold section 3 of a pulley 1, and descends toward the end face of an anti-hand of cut from a center is prepared. Moreover, through hole 8c is formed in press fit section 8a as roll off at the time of carrying out elastic deformation. While carrying out press fit fitting of the press fit section 8a of the bond part material 8 which consists of such a configuration at the hold section 3 of a pulley 1, a pulley 1 and the hub assembly 4 are connected with one by fitting lobe 8b of the bond part material 8 into crevice 6b of the revolution member 6. In addition, although the bond part material 8 is fitted into the hold section 3 of a pulley 1 every two, in setting up the threshold value of power transfer, one bond part material 8 may be placed and boiled, or it may fit into all the hold sections 3. Moreover, although the end face of lobe 8b of the bond part material 8 is made into a radii-like end face and engagement of lobe 8b of the bond part material 8 and crevice 6b of the revolution member 6 was canceled smoothly, it is good also as an even end face.

[0013] Since the belt which does not illustrate the transmission which consists of such structure to outside body 1b of a pulley 1 is hung and a pulley 1, and the bond part material 8 and the hub assembly 4 rotate to one, a revolving shaft B rotates and a compressor drives. Moreover, since the bond part material 8 will be compressed by the space currently formed between the revolution member 6 and the hold section 3 while lobe 8b of the bond part material 8 carries out elastic deformation and escaping from crevice 6b of the revolution member 6 on the turning effort of a pulley 1 if a revolving shaft B will be in a lock condition, only a pulley 1 rotates and transfer of power is intercepted. Therefore, the belt hung on a pulley 1 is cut and generating of the problem of transfer of the power to other follower side devices becoming impossible etc. can be prevented. Moreover, when engagement of lobe 8b of the bond part material 8 and crevice 6b of the revolution member 6 is canceled by lifting of the primary load of a revolving shaft B, and the load of a revolving shaft B disappears, lobe 8b and crevice 6b are engaged again. Furthermore, when a revolving shaft B changes into a lock condition thoroughly, the bond part material 8 is damaged and transfer of power is intercepted thoroughly.

[0014] Moreover, since the structure which inserted bearing 2 to the inner skin of a pulley 1 by the injection molding of a synthetic-resin ingredient, and was combined with one was used for the transmission which consists of such structure, it can exclude like the erector who withdraws [fits in it and] from and does the stop of the bearing 2 to the inner skin of a pulley 1. Furthermore, since the hold section 3 demarcated by rib 1d which adjoins disk section 1c was formed in the pulley 1 at one, machining of the hole which fits in the bond part material 8 can be excluded. In addition, the configuration of the hold section 3 formed in the pulley 1, the configuration of the bond part material 8 by which fitting is carried out to the hold section 3, the structure of the hub assembly 4, etc. are not limited to the configuration of the transmission of an operation gestalt, and structure, but can perform modification of a design. Especially the hub assembly 4 can use the flange 5a as the revolution member 6 by extending flange 5a of a hub 5 to radial. Moreover, the roll off of the bond part material 8 may be a notch slot formed in the field which contacts disk section 1c instead of through hole 8c.

[0015] Next, the gestalt of another operation is explained. Drawing 3 is the top view where the part was fractured, and drawing 4 is a sectional view. The configuration of bond part material, the configuration of the revolution member of a hub assembly, and the structure with which bond part material and a revolution member engaged in the hand of cut are different to the power transfer member which explained previously the transmission shown in these drawings. In addition, since the structure of a pulley 1 is the same, the overlapping detailed explanation is omitted by showing the already used sign in a drawing.

[0016] namely, in the hub assembly 9 with which the revolving shaft B of a compressor was equipped Disc-like inward-flange section 10a fixed to flange 5a of a hub 5 by two or more rivets. The hold section 3 of a pulley 1, and disc-like outward-flange section 10b which counters in the direction of an axis. It consists of a configuration which has body 10c which connected these flanges 10a and 10b, and the revolution member 10 by which two or more through holes 11 as the engagement section were formed in outward-flange section 10b is formed. And after carrying out spline fitting of the hub 5 at a revolving shaft B until the side face of inward-flange section

10a of the revolution member 10 contacts the axis end of a revolving shaft B, the revolving shaft B is equipped with the hub assembly 9 at one by screwing a screw thread 7 in the tapped hole of a revolving shaft B.

[0017] Moreover, in the width of face of a circumferential direction being narrow from opening of the hold section 3 of a pulley 1, and equipping a revolving shaft B with the hub assembly 9, among the circular end faces formed in lobe 8b of the bond part material 8, fitting of the end face of hand-of-cut central approach is carried out to the through hole 11 of the revolution member 10, and each through hole 11 of the revolution member 10 projects slightly.

[0018] When the same operation as the transmission explained previously is acquired and the revolving shaft B of a compressor locks the transmission which consists of such structure, since lobe 8b of the bond part material 8 escapes from the through hole 11 of the revolution member 10, carrying out elastic deformation, transfer of power is intercepted. In addition, it is that the structure with which the bond part material 8 and the revolution member 10 engaged in the hand of cut is only different, and like the gestalt of previous operation, while the gestalt of this operation can exclude an erector degree and machining, modification of a design is possible for it.

[0019] Next, the gestalt of another operation is explained again. Drawing 5 is a top view and drawing 6 is a sectional view. The rib configuration of a pulley, the configuration of bond part material, the configuration of the revolution member of a hub assembly, and the structure with which bond part material and a revolution member engaged in the hand of cut are different to the power transfer member which explained previously the transmission shown in these drawings. In addition, about the same structure as the already explained transmission, the overlapping detailed explanation is omitted by showing the already used sign in a drawing.

[0020] Namely, the pulley 12 supported by the cylinder lobe A of a compressor free [a revolution] Inside body 12a by which the outer ring of spiral wound gasket of bearing 2 was combined with inner skin by one, and outside body 12b by which the pulley slot was formed in the peripheral face, It is constituted as an injection molding article of synthetic-resin material with which the side face of disk section 12c which connected these bodies 12a and 12b, and the peripheral face of inside body 12a, the inner skin of outside body 12b and disk section 12c, and two or more ribs 12d and 12e formed in one were formed. Moreover, the configuration is different and rib 12d by the side of the revolution member 14 and rib 12e by the side of housing of a compressor have become depressed in the concave from the end face of Bodies 12a and 12b rib 12d. And 12f of two or more hold sections in which fitting of the bond part material 15 is carried out to this rib 12d by disk section 12c is demarcated. In addition, rib 12e is the same configuration as the pulley 1 explained previously.

[0021] Moreover, the revolution member 14 of the shape of a cup fixed to flange 5a of a hub 5 by two or more rivets is formed in the hub assembly 13 with which the revolving shaft B of a compressor was equipped. Two or more crevice 14b which became depressed in the shape of abbreviation for V characters is formed in body 14a of the revolution member 14 as the engagement section. And the revolving shaft B is equipped with the hub assembly 13 at one so that the head of body 14a may be inserted into 12f of hold sections of a pulley 12. In addition, the revolution member 14 which consists of such a configuration is formed of press working of sheet metal of a sheet metal.

[0022] Moreover, two or more bond part material 15 by which press fit fitting was carried out to 12f of hold sections of a pulley 12 While the same cross section as 12f of hold sections is formed in the prism configuration of an abbreviation sector, it is the rubber member in which through hole 15b as roll off was formed, and heights 15a of the letter of the abbreviation for V characters as an engaged portion is formed in the part which counters by radial the head side of inside body 12a of a pulley 12. Fitting of each heights 15a is carried out to each crevice 14b of the revolution member 14, and the bond part material 15 and the revolution member 14 are being engaged in the hand of cut.

[0023] When the revolving shaft B of a compressor locks the transmission which consists of such structure, the bond part material 15 carries out elastic deformation, and engagement of this bond part material 15 and the revolution member 14 is canceled. Moreover, when the condition

continues, heights 15a of the bond part material 15 is damaged. In addition, also in the gestalt of this operation, like the gestalt of previous operation, while being able to exclude an erector degree and machining, modification of a design is possible.

[0024]

[Effect of the Invention] Since the transmission of this invention made bond part material the structure which fits in at the hold section of the pulley demarcated with the rib which adjoins the disk section while using it as the pulley made from synthetic-resin material with which bearing was inserted focusing on the driving-side revolution member, it can exclude machining of the hole like the erector who withdraws [fits in it and] from and does the stop of the bearing to the inner skin of a pulley which fits in bond part material.

[0025] Moreover, the transmission of this invention can offer cheaply an effective transmission — the threshold value of the power transfer force can be easily set up with the number of the bond part material by which fitting is carried out to two or more hold sections formed in the pulley — while transfer of power is attained again, when the load of the revolving shaft which went up in primary disappears.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the transmission shown as a gestalt of implementation of this invention, and is the top view which fractured the part.

[Drawing 2] It is the sectional view of drawing 1 .

[Drawing 3] It is the transmission shown as a gestalt of another operation, and is the top view which fractured the part.

[Drawing 4] It is the sectional view of drawing 3 .

[Drawing 5] It is the top view of the transmission shown as a gestalt of another operation.

[Drawing 6] It is the sectional view of drawing 5 .

[Description of Notations]

1 Pulley

2 Bearing

3 Hold Section

5 Hub

6 Revolution Member

8 Bond Part Material

10 Revolution Member

12 Pulley

14 Revolution Member

15 Bond Part Material

[Translation done.]